



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/759,945 | 01/16/2004 | Jos Huybrechts | FA1105USNA | 8234 |
| 23906 | 7590 | 06/05/2007 | EXAMINER | |
| E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805 | | | WU, IVES J | |
| | | ART UNIT | PAPER NUMBER | |
| | | 1724 | | |
| | | MAIL DATE | | DELIVERY MODE |
| | | 06/05/2007 | | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/759,945 | HUYBRECHTS ET AL. | |
| | Examiner | Art Unit | |
| | Ives Wu | 1724 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 4/10/07.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

(1). Applicants' Affidavits filed on 04/10/2007 has been received.

The rejections of claims 1-13 in the prior Office Action date 01/19/2007 is withdrawn in response to the Affidavits of 04/10/2007.

A new ground of rejections for claims 1-13 is introduced in the following.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2). **Claims 1-5, 7-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson et al (US03892714).

As to component A) at least one hydroxyl-functional (meth)acrylic copolymer; component B) at least one isocyanate cross-linking agent in a coating composition in **independent claim 1**, Sampson et al (US03892714) disclose a process for producing polymeric composition, especially suitable for use as coating composition (Col. 1, line 5-10). According to another aspect, there is provided a process for the preparation of a polymeric composition which comprises cross-linking a modified copolymer with a **polyisocyanate** wherein the modified copolymer comprises a **copolymer of two or more ethylenically unsaturated monomers at least one of which contains a hydroxyl group**, modified by the presence of lactone chains attached to at least some of the hydroxyl groups of the copolymer (Col. 1, line 32-40).

As to the hydroxyl-functional (meth)acrylic copolymer having OH value from 160 to 200 mg KOH/g and a weight average molecular weight M_w from 2,500 to 30,000 in **independent claim 1**, Sampson et al disclose the unmodified having an hydroxyl value of at least 20 mg KOH/g but preferably less than 250 mg KOH/g (Col. 1, line 61-64). The average M.W. of about 25,000 is shown in Example 1 (Col. 5, line 34).

As to component a) in the step AI) of free-radically copolymerizing a monomer mixture to obtain hydroxyl-functional (meth)acrylic copolymer A) in **independent claim 1**, Sampson et al disclose a process for the preparation of a polymeric composition which comprises: step a. reacting an ethylenically unsaturated hydroxyl-containing monomer with one or more ethylenically unsaturated monomers to form a copolymer containing hydroxyl side groups (Col. 1, line 66 – Col. 2, line 4). Preferably the hydroxyl-containing unsaturated monomer is an ethylenically unsaturated hydroxyalkyl ester (Col. 2, line 15-17).

As to component b) in the step AI) of free-radically copolymerizing a monomer mixture to obtain hydroxyl-functional (meth)acrylic copolymer A) in **independent claim 1**, Sampson et al disclose preferably each ethylenically unsaturated monomer having the part formula $\text{CH}_2=\text{C}<$ so that it may be readily polymerized (Col. 2, line 31-33). Although Sampson et al do not teach cycloaliphatic ester of a free-radically copolymerizable olefinically unsaturated carboxylic acid. It would be obvious to have a cycloalkyl ester such as cyclohexyl methacrylate because it also has part formula $\text{CH}_2=\text{C}<$.

As to component c) in the step AI) of free-radically copolymerizing a monomer mixture to obtain hydroxyl-functional (meth)acrylic copolymer A) in **independent claim 1**, Sampson et al disclose styrene (Col. 2, line 41).

As to step AII) reacting at least part of the hydroxyl groups of the hydroxyl-functional (meth)acrylic copolymer obtained in step AI) with d) at least one lactone compound in **independent claim 1**, Sampson et al disclose step b. modifying this copolymer by reacting at least some of the hydroxyl side groups with a lactone (Col. 1, line 55-56).

As to the hydroxyl-functional (meth)acrylic copolymer obtained in step AI) having a T_g of at least 50 °C and the copolymer to be free of epoxy-functional free-radically copolymerizable olefinically unsaturated monomers in **independent claim 1**, in view of substantially identical composition disclosed by Sampson et al, and by Applicants, it is

Art Unit: 1724

examiner's position to believe that the composition of prior art would inherently possess the T_g of at least 50 °C and the copolymer of prior art is free of epoxy-functional free-radically copolymerizable olefinically unsaturated monomers as claimed. Since USPTO does not have facilities to make determinations of this sort, the burden now is shifted to applicants to prove otherwise. *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980).

As to component A.a) 30-60 wt%, A.b) 15-40 wt%. A.c) 10-40 wt% and 18-40 wt% of component A.d) with total weight of A.a to A.d to be 100 wt% in claim 2, Sampson disclose the lactone content based on modified polymeric composition to be 10 to 60 wt% (Col. 3, line 46-48), which reads on the limitation for component A.d) as claimed. Sampson et al disclose the molar ratio of hydroxyl-containing monomer to other monomer is desirably kept constant during their reaction (Col. 3, line 12-15). It would be obvious to have a selected molar ratio so that the distribution of hydroxyl-containing unsaturated monomer to other unsaturated monomers meets the limitation of component A.a, A.b and A.d with total to be equal 100 wt%.

As to limitation of **claims 3 and 4**, Sampson et al disclose the unmodified having an hydroxyl value of at least 20 mg KOH/g but preferably less than 250 mg KOH/g (Col. 1, line 61-64), in view of substantially identical composition disclosed by Sampson et al, and by Applicants, it is examiner's position to believe that the composition of prior art would inherently possess T_g , M_w as claimed. Since USPTO does not have facilities to make determinations of this sort, the burden now is shifted to applicants to prove otherwise. *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980).

As to limitation of **claim 5**, Sampson et al disclose 2-hydroxy-ethyl-methacrylate (Col. 2, line 28).

As to limitation of **claim 7**, Sampson et al disclose styrene (Col. 2, line 41).

As to limitation of **claim 8**, Sampson et al disclose epsilon-caprolactone (Col. 3, line 65).

As to limitation of **claim 9**, Sampson et al disclose the polymeric composition to be used as a coating composition the polyisocyanate and the modified polymer are preferably thoroughly mixed before applying them in a suitable manner to the surface to be coated. Preferably the mixture is applied as a liquid to the surface by any convenient means and it is then normally dried. The reaction may then be completed by a curing step (Col. 47-50). The coating

Art Unit: 1724

compositions based on the patent's polymeric composition being suitable in such diverse fields as motor cars and kitchen furniture (Col. 4, line 56-58), which has multi-layer coating.

As to limitation of **claims 10-13**, Sampson et al disclose the coating composition being suitable in such diverse fields as **motor cars** and kitchen furniture. In its preparation, pigments, dyes may be added in order that the polymeric composition may be particularly suited to a specific coating use (Col. 4, line 56-64). Therefore, it would be obvious to apply the coating composition as clear or color top coat on the automotive or its parts, as evidenced by Stengel et al (US06458885B1) that clear coat, color coat for the automotive refinish applications (Col. 6, line 21-22), where multi-layer coating substrates is illustrated in Example 4.

(3). **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sampson et al (US03892714) in view of Thomas et al (US06130286A).

As to selection of component b) in **claim 6**, Sampson et al disclose the ethylenically unsaturated monomer having part formula $\text{CH}_2=\text{C}<$ (Col. 2, line 31-32). Sampson et al **do not teach** species of cycloaliphatic esters as claimed.

However, Thomas et al (US06130286) **teach** the cycloalkyl acrylate or methacrylate having 2 to 6 carbon atoms in the esterifying group (Col. 6, line 1-4). Examples of particularly useful acrylate monomers are isobornyl methacrylate and cyclohexyl methacrylate (Col. 6, line 8).

Therefore, it would have been obvious to include these cycloalkyl methacrylate of Thomas et al for the ethylenically unsaturated monomer in view of these cycloalkyl methacrylates disclosed by Thomas et al to be common species to one of ordinary skills in the art of coating.

Response to Arguments

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 1724

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1724

Date: May 30, 2007

DUANE SMITH
PRIMARY EXAMINER

D
5-31-07